Department of Natural Resource Sciences

Thursday February 26th| 10:05AM

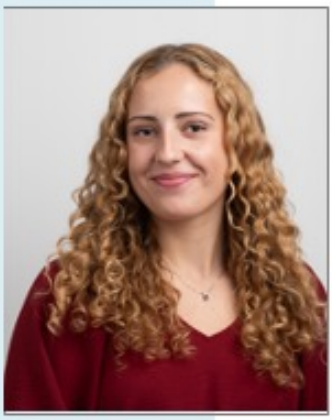
R4-045

The shape of things to come: Geometric Morphometric Analysis of Shape Differences in Greenland Halibut

Amanda Round

M.Sc. Student, Supervised by Dr. Denis Roy

ABSTRACT: The Greenland Halibut (Reinhardtius hippoglossoides) is a commercially important demersal flatfish distributed across the Arctic Ocean. Non-selective exploitation has raised concerns that disproportionate removal of female Greenland halibut, which attain larger sizes due to sexual dimorphism, may exacerbate overharvesting and destabilize sex ratio dynamics critical for replenishing stocks. We used geometric morphometric assessments to detect shape variation among sexes and geographic regions to identify whether an efficient method exists to reliably sex fish without requiring lethal sampling. Analyses of landmark configurations demonstrate that sexes can be differentiated through shape analyses, whereas site-specific differences are also distinguishable, but are comparatively less pronounced. This study highlights the importance of developing a non-lethal tool for monitoring sex ratios critical to reproductive capacity.



Amanda Round,
M.Sc Renewable Resources

BIO: Amanda is a Master's student in the Fish Population and Conservation Genomics Laboratory, supervised by Dr. Denis Roy. She is interested in how Arctic fish populations respond to environmental changes, focusing on the intersection between shifting ecosystems and human activity. Her work aims to produce tangible insights that can inform sustainable fisheries and support the communities that rely on them.

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Department of Natural Resource Sciences

26/02/2026| 10:30 – 11:15

R4-045

Arctic cod (*Boreogadus saida*) in warming Arctic: Genetics, adaptation, and resilience

Marie Launay

PhD candidate, Natural Resource Sciences, McGill University

ABSTRACT: The Arctic is rapidly warming, challenging ecosystem stability. My PhD focuses on Arctic cod (*Boreogadus saida*), a central species vulnerable to climate-driven change. My first chapter shows its central role in Arctic food webs through links between gill raker morphology and diet across ontogeny, but also demonstrates that sea ice loss reduces critical habitat and alters trophic interactions for the species. My second and third chapters use genomic approaches to investigate population dynamics across the circumpolar range. Using low-coverage whole-genome resequencing, I analyzed ~153,000 SNPs in 458 individuals from Canada, Greenland, Russia, and Norway. Preliminary results revealed two latitudinal genetic clusters and signals of temperature-associated local adaptation.

Marie Launay

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PhD candidate

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Fish Population and Conservation Genomics Laboratory

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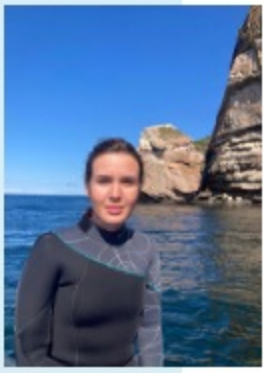
McGill university



BIO: Marie is a PhD student in Natural Resource Sciences at McGill University under the supervision of Professor Denis Roy. She completed her B.sc in biology at Sorbonne University, France, her first M.sc in Systematic at the French National Museum of Natural History and her second M.sc in Marine biology at Pascal Paoli University, France. She is passionate about scuba diving, marine ecosystems and wildlife. Currently she is using molecular tools to understand the consequences of global changes on Arctic fishes' populations.

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